

Remarks

In the claims

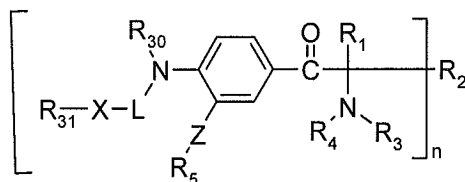
Claims 1-5 and 8-12 were pending.

Claims 1, 8, 11 and 12 are cancelled.

Claims 2-5, 9 and 10 are amended.

The application now contains claims 2-5, 9 and 10.

Claim 2 is amended to focus on specific embodiments of the invention. Claim 2 is made independent by deleting the phrase "according to claim 1" and inserting in its stead, from claim 1,



"of the formula I" including the limitation from claim 1 that R_5 may also be C_1 - C_4 -alkyl, and inserting at the end of claim 2 the relevant part of the proviso of claim 1.

Claim 2 is further amended to specify that L is linear or branched C_2 - C_{18} -alkanediyl and to delete -S- and NR_{32} from the values for X; to delete the groups NO_2 , C_1 - C_4 -alkylthio and phenoxy from the phenyl substituents of R_1 (d); to delete from R_3 the values C_1 - C_4 -alkoxy and C_3 - C_5 -alkenyl; and to limit R_{31} to hydrogen or C_2 - C_6 -alkyl substituted by hydroxy. Reference to R_{32} is deleted as no longer relevant.

Support is inherent in original claim 1-3.

Claim 3 is amended to delete branched alkyl from L; delete the groups NO_2 and $-N(R_{10})_2$ from the phenyl substituents of R_1 (d); delete reference to R_{10} and to limit R_{31} to hydrogen. Claims 4, 5 and 10 are amended to be dependent from claim 2 and claims 4 and 8 are amended to delete the value 4-aminobenzyl from R_1 . Support is inherent in the claims.

No new matter is added.

Rejections

Claims 1-5 and 8-10 are rejected under 35 USC 112 second paragraph because the definition of R_{31} in claim 1 was found to be confusing. Claim 1 is cancelled and R_{31} is limited in claim 2 to only hydrogen or C_2-C_6 -alkyl substituted by hydroxy. Applicants respectfully submit that the rejections under 35 USC 112 second paragraph are overcome and kindly ask that they be withdrawn.

Claims 1-5 and 8-10 are rejected under 35 USC 102(b) as anticipated by each of Eldin, US 6,048,667; Kojima, US 5,698,285; and Desobry, 5,554,664. The Examiner's finds that many of the compounds in the previously submitted claims are at least generically disclosed in each if the cited art.

Applicants respectfully traverse the rejections.

The invention as instantly claimed provides photoinitiators which overcomes the problems of volatile or extractable organic species being formed upon the photo-cure of polymerizable compositions, e.g., the specification in the paragraph that bridges pages 1 and 2. This is presumably accomplished by incorporating a hydroxy group into the photoinitiator as part of $-L-X-R_{31}$.

Surprisingly however, it was found that certain specific alpha-aminoketones of formula I not only overcome the problem of forming volatile or extractable organic species during cure, but also are more effective as photoinitiators than highly active and widely used commercial photoinitiators, see for Example the curing rates listed at the bottom of page 55 in the specification.

Applicant's do not argue that the individual substituents found on the instantly claimed alpha-aminoketones are found in the cited art, however, Applicants respectfully take the position that the instant compounds are not prepared in the art, the combination of certain substituent patterns are fairly described, and the compounds of the instant amended claims exhibit surprising activity in cure rate which could not be anticipated from the art.

For example, the instantly claimed alpha-aminoketones require the presence of a hydroxy alkyl group at $-L-X-R_{31}$ and a hydrogen at R_{30} on the nitrogen. This specific combination is required for the excellent activity discovered for the instantly claimed materials and is not exemplified or described by the cited art. Applicants respectfully aver that there is no suggestion in the art that such compounds would prove more effective than other similar known materials. Each of the cited references make no distinction between amino, thioether or ether substituents at the site of the instant hydroxyalkyl amine.

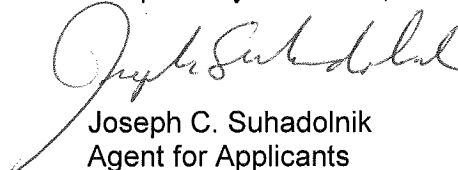
Applicants respectfully point out that, for example, Desobry discloses aminoketone photoinitiators with alkoxyalkyl amines at the position of the instant hydroxyalkyl amine, but such compounds lack the reactable hydroxy group. Desobry also discloses hydroxyalkyl thioethers at the position of the instant hydroxyalkyl amine, but these thioethers are quite different at least sterically from the instant amines, for example, the amine has three valences vs two for the thioether.

Applicants can not offer a rationale as to why the specific, instantly claimed alpha-aminoketones are so effective. Nonetheless, Applicants respectfully submit that the claims as instantly amended refer to compounds that hitherto did not exist and which display unexpected advantages and the rejections under 102(b) are overcome.

Applicants kindly ask that all rejections be withdrawn and claims 2-5, 8 and 9 be found allowable. In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Ciba Specialty Chemicals Corporation
Patent Department
540 White Plains Road
P.O. Box 2005
Tarrytown, NY 10591-9005
Tel. (914) 785-2973
Fax (914) 785-7102

Respectfully submitted,



Joseph C. Suhadolnik
Agent for Applicants
Reg. No. 56,880
filed under 37 CFR 1.34(a)